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| 10/574,468   | 03/31/2006  | Hideaki Miura        | 127614              | 2544             |
| 25944 7590 12/04/2008<br>OLIFF & BERRIDGE, PLC<br>P.O. BOX 320850<br>ALEXANDRIA, VA 22320-4850 |             |                      |                     |                  |
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| CHAPEL, DEREK S  |             |                      |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/574,468

**Applicant(s)**

MIURA ET AL.

**Examiner**

DEREK S. CHAPEL

**Art Unit**

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 July 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2, 4-7 and 11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 6 and 7 is/are allowed.  
6) ☒ Claim(s) 1, 2, 4, 5 and 11 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 31 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/808)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Status Of Claims***

1. This Office Action is in response to an amendment received 7/22/2008 in which Applicant lists claim 7 as being original, claims 3 and 8-10 as being canceled, claims 1-2 and 4-6 as being currently amended, and claim 11 as being new. It is interpreted by the examiner that claims 1-2, 4-7 and 11 are pending.

### ***Specification***

2. The amendments to the specification dated 7/22/2008 are accepted. The objections to the specification cited in the office action mailed 4/22/2008 are hereby withdrawn.

### ***Claim Objections***

3. The amendments to the claims dated 7/22/2008 are accepted. The objections to the claims cited in the office action mailed 4/22/2008 are hereby withdrawn.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
7. Claims 1, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Redfield et al., U.S. Patent Number 5,477,347 (hereafter Redfield) in view of Tsuboyama et al., U.S. Patent Number 4,775,225, of record (hereafter Tsuboyama<sub>1</sub>).
8. As to claim 1, Redfield discloses a holographic recording medium (see at least figure 2, element 54) comprising:
- two transparent substrates (see at least figure 2, elements 48 and 56);
  - a holographic recording material layer sandwiched therebetween (see at least figure 2, element 54); and
  - a spacer integrally embedded in this holographic recording material layer (see at least figure 2, element 50), the spacer regulating a gap between the two transparent substrates (see at least figure 2),

wherein the spacer is formed in a lattice configuration so as to form lattice cells (see at least figure 2, elements 50 and 52), the holographic material layer inside the lattice cells forming recording areas of the holographic recording material layer (see at least the abstract).

Redfield does not specifically disclose that the spacer is composed of fibers.

However, Tsuboyama<sub>1</sub> teaches using fiber-like spacers (see at least figures 3A and 3B, element 307 as well as column 4, lines 33-36 and column 5, lines 8-55 of Tsuboyama<sub>1</sub>) to separate two transparent substrates (see at least figures 3A and 3B, elements 301 and 302 as well as column 4, lines 33-36 and column 5, lines 8-55 of Tsuboyama<sub>1</sub>) having liquid in between the substrates (see at least figures 3A and 3B, element 308 as well as column 4, lines 33-36 and column 5, lines 8-55 of Tsuboyama<sub>1</sub>).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the spacers of Redfield to include the teachings of Tsuboyama<sub>1</sub> so that the spacer is formed out of individual fibers instead of a single solid piece, for the purpose of using less material and making the holographic apparatus lighter.

Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the spacer out of individual fibers instead of a single solid piece, since it has been held that a mere change in shape of an element is generally recognized as being within the level of ordinary skill in the art when the change in shape is not significant to the function of the combination.

Therefore, one would have been motivated to select the shape of the spacer to be individual fibers instead of a single solid piece, for the purpose of using less material and making the holographic apparatus lighter. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

9. As to claim 4, Redfield in view of Tsuboyama<sub>1</sub> discloses that the fibers form at least one connection gap therebetween for each of the recording areas (see at least figure 3B of Tsuboyama<sub>1</sub> as well as the combination set forth above).

10. As to claim 5, Redfield does not specifically disclose necked parts for letting a liquid holographic recording material in and out of the recording areas formed in peripheries of the fibers in a longitudinally intermittent fashion.

However, Tsuboyama<sub>1</sub> teaches using fiber-like spacers arranged in a grid pattern forming necked parts which let a liquid material in and out of the areas formed in the peripheries of the fibers (see at least figures 3A and 3B, element 307 as well as column 4, lines 33-36 and column 5, lines 8-55 of Tsuboyama<sub>1</sub>; it is noted that the "necked parts" are the areas between the spacers which is narrower than the width or height of the liquid crystal device) to separate two transparent substrates (see at least figures 3A and 3B, elements 301 and 302 as well as column 4, lines 33-36 and column 5, lines 8-55 of Tsuboyama<sub>1</sub>) having liquid in between the substrates (see at least figures 3A and 3B, element 308 as well as column 4, lines 33-36 and column 5, lines 8-55 of Tsuboyama<sub>1</sub>).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the holographic apparatus of Redfield to include

the teachings of Tsuboyama<sub>1</sub> so that the spacers form necked parts for letting a liquid holographic recording material in and out of the recording area formed in peripheries of the fibers in a longitudinally intermittent fashion, for the purpose of providing constant spacing between the transparent substrates throughout the apparatus while using less material and making the holographic apparatus lighter.

11. Claims 11 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Redfield et al., U.S. Patent Number 5,477,347 (hereafter Redfield) in view of Tsuboyama et al., U.S. Patent Number 4,674,839, of record (hereafter Tsuboyama<sub>2</sub>).

12. As to claim 11, Redfield discloses a holographic recording medium (see at least figure 2, element 54) comprising:

two transparent substrates (see at least figure 2, elements 48 and 56);

a holographic recording material layer sandwiched therebetween (see at least figure 2, element 54) and including recording areas (see at least figure 2, element 54);  
and

a spacer integrally embedded in this holographic recording material layer (see at least figure 2, element 50), the spacer regulating a gap between the two transparent substrates (see at least figure 2),

wherein the spacer is arranged around each of the recording areas of the holographic recording material layer (see at least figure 2).

Redfield does not specifically disclose that the spacer is composed of a large number of beads.

However, Tsuboyama<sub>2</sub> teaches using spherical beads as spacers arranged in a lattice pattern (see at least figures 4 and 5, element 6 as well as column 3, lines 35-48 of Tsuboyama<sub>2</sub>) to separate two transparent substrates (see at least figures 4 and 5, elements 3a and 3b as well as column 3, lines 35-48 of Tsuboyama<sub>2</sub>) having liquid in between the substrates (see at least figures 4 and 5, element 7 as well as column 3, lines 35-48 of Tsuboyama<sub>2</sub>).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the holographic recording system of Redfield to include the teachings of Tsuboyama<sub>2</sub> so that the spacer of the recording system is composed of a large number of spherical beads, for the purpose of using less material and making the holographic apparatus lighter.

Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the spacer out of a large number of spherical beads instead of a single solid piece, since it has been held that a mere change in shape of an element is generally recognized as being within the level of ordinary skill in the art when the change in shape is not significant to the function of the combination.

Therefore, one would have been motivated to select the shape of the spacer to be a large number of spherical beads instead of a single solid piece, for the purpose of using less material and making the holographic apparatus lighter. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

13. As to claim 2, Redfield in view of Tsuboyama<sub>2</sub> discloses that the spacer is formed in a continuous lattice configuration so as to form lattice cells (see at least figure 2,



elements 50 and 52 of Redfield), and each of the recording areas is formed in a corresponding lattice cell (see at least figure 2, elements 50, 52 and 54 as well as the abstract of Redfield).

***Allowable Subject Matter***

14. Claims 6 and 7 are allowed for the same reasons set forth in the action mailed 4/22/2008.

***Response to Arguments***

15. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEREK S. CHAPEL whose telephone number is (571)272-8042. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. S. C./  
Examiner, Art Unit 2872  
11/25/2008

/Stephone B. Allen/  
Supervisory Patent Examiner  
Art Unit 2872